**AMENDMENTS IN THE CLAIMS:**

1-14. (Canceled)

15. (Currently Amended) A method of manufacturing a coating layer of a predetermined reflectivity on an emission facet of a semiconductor laser ~~arranged to emit at a given wavelength and having an emission facet with a coating layer of a predetermined reflectivity~~, the method comprising the steps of:

- forming, by a PE-CVD process, said coating layer ~~as homogeneous layer~~ of a predetermined thickness on said emission facet, said coating layer including amorphous $Si_xO_yN_y$:H, and
- controlling the process parameters of said PE-CVD process

  ~~for achieving~~

  ~~- a predetermined refraction index and/or~~

  ~~- a predetermined density of said coating layer~~

  to result in an Si/N ratio between 0.75 and 1.5.

B1

16. (Currently Amended) The method according to claim 15, wherein the thickness of the coating layer is selected to be one quarter of the ~~given~~ wavelength emitted by the laser.

17. (Previously Added) The method according to claim 15, wherein the process parameters of the PE-CVD process are adjusted to produce a refraction index of the coating layer of at least 1.83 for a GaAs/AlGaAs laser.

18. (Currently Amended) The method according to claim 15, wherein

- the coating layer is homogeneous and consists of amorphous $Si_xO_yN_y$:H, and
- the process parameters of the PE-CVD process are selected to result in a ~~Si/N ratio between 0.75 and 1.5 whereby the~~ density of said ~~amorphous~~ coating layer ~~approaches~~ approaching the density of crystalline $Si_3N_4$.

19. (Previously Added) The method according to claim 15, wherein the controlled process parameters of the PE-CVD process include:

- the gaseous components and their relative ratios forming the plasma,
- the power of said plasma,
- the pressure, and
- the substrate temperature at which said PE-CVD process is executed.

20. (Previously Added) The method according to claim 19, wherein the controlled process parameters of the PE-CVD process further include:

- the total flux of the gaseous components and
- the addition of H as precursor gas.

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21. (Currently Amended) A semiconductor laser ~~designed~~ for emitting at a given wavelength and having an emission facet with a coating layer of a predetermined reflectivity, wherein

- said coating layer ~~a homogeneous~~ comprises amorphous $Si_xO_yN_y$:H ~~layer and of a preselected thickness,~~
- ~~said coating layer is produced by a PE-CVD process,~~ and ~~said coating layer's refraction index and/or density is adjusted by the process parameters of said PE-CVD process~~
- the Si/N ratio in said coating layer is between 0.75 and 1.5.

22. (Previously Added) The semiconductor laser according to claim 21, said laser having a semiconductor body in which a standing wave is produced, whereby coupling of said standing wave between said semiconductor body and the coating layer occurs at the minimum of said standing wave.

23. (Previously Added) The semiconductor laser according to claim 21, wherein the semiconductor laser is a GaAs/AlGaAs laser.

24. (Canceled) ~~The semiconductor laser according to claim 21, wherein the coating layer comprises amorphous $Si_xO_yN_y$:H.~~

25. (Previously Added) The semiconductor laser according to claim 21, wherein the refraction index of the coating layer is at least 1.83 for a GaAs/AlGaAs laser.

26. (Previously Added) The semiconductor laser according to claim 21, wherein the thickness of the coating layer is one quarter of a given wavelength emitted by the laser.

27. (Currently Amended) The semiconductor laser according to claim 21, wherein

- the coating layer is amorphous $Si_xO_yN_y$:H[, and
- the Si/N ratio in said coating layer is between 0.75 and 1.5].

B1 cont'd

28. (Currently Amended) An all-optical transmitter with an optical input and an optical output and optical means between said input and said output, wherein said optical means comprises a semiconductor laser according to ~~any of the~~ claims 21 ~~to 27~~.

29. (Currently Amended) An all-optical amplifier with an optical input and an optical output
and optical amplification means between said input and said output,
wherein
said optical amplification means includes a semiconductor laser
according to ~~any of the~~ claims 21 ~~to 27~~.

30. (Currently Amended) A packaged all-optical unit with at least one optical input and at least one optical output and optical transmission means between each said optical input and one or more of said optical outputs,
said optical transmission means comprising at last one semiconductor laser

B' cont'd according to ~~any of the~~ claim~~s~~ 21 ~~to 27~~.